

Message

From: Washington, John [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=FDC3E8CE9F1D45C4894881FF420CA104-WASHINGTON, JOHN]
Sent: 12/11/2019 1:32:19 PM
To: Gillespie, Andrew [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dce99ece87694a06b3009d7756e2a89e-Gillespie, Andrew]
Subject: RE: ORD Advanced Notification: Manuscript: Washington et al., Nontargeted mas-spectral discovery of novel PFAS & their use to fingerprint legacy PFAS in New Jersey

Great. I will call you now at 8:32.

From: Gillespie, Andrew <Gillespie.Andrew@epa.gov>
Sent: Wednesday, December 11, 2019 8:31 AM
To: Washington, John <Washington.John@epa.gov>
Subject: RE: ORD Advanced Notification: Manuscript: Washington et al., Nontargeted mas-spectral discovery of novel PFAS & their use to fingerprint legacy PFAS in New Jersey

Sure, I am free until 930...

Andrew J. R. Gillespie, Ph. D.
Associate Director, US EPA/ORD/CEMM
ORD Executive Lead for PFAS R&D

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From: Washington, John <Washington.John@epa.gov>
Sent: Wednesday, December 11, 2019 8:05 AM
To: Gillespie, Andrew <Gillespie.Andrew@epa.gov>
Subject: RE: ORD Advanced Notification: Manuscript: Washington et al., Nontargeted mas-spectral discovery of novel PFAS & their use to fingerprint legacy PFAS in New Jersey

Hi Andy,

Thank you very much. I just returned from NJ presentation where it was very well received.

Do you have a few minutes today that you can spend to talk with me? I can call you if you identify a time. I simply am looking for one last confirmation of what you have told me before in case others misunderstand.

Thanks,
John

From: Gillespie, Andrew <Gillespie.Andrew@epa.gov>
Sent: Wednesday, December 11, 2019 7:50 AM
To: Washington, John <Washington.John@epa.gov>; Stevens, Caroline <Stevens.Caroline@epa.gov>; Schumacher, Brian <Schumacher.Brian@epa.gov>
Subject: FW: ORD Advanced Notification: Manuscript: Washington et al., Nontargeted mas-spectral discovery of novel PFAS & their use to fingerprint legacy PFAS in New Jersey

FYI, comments from OCSPP on the paper, for your consideration.
I plan to clear the paper on Friday as I will be out of the office after that for 3 weeks.

Once I clear it, you are good to submit the paper.

If we do get comments from NJ, please consider them when received either before you submit, or when you respond to journal peer review comments.

Good luck, Andy

Andrew J. R. Gillespie, Ph. D.

Associate Director, US EPA/ORD/CEMM

ORD Executive Lead for PFAS R&D

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From: Frithsen, Jeff <Frithsen.Jeff@epa.gov>

Sent: Wednesday, December 11, 2019 7:28 AM

To: Watkins, Tim <Watkins.Tim@epa.gov>; Gillespie, Andrew <Gillespie.Andrew@epa.gov>

Cc: Fleming, Megan <Fleming.Megan@epa.gov>

Subject: FW: ORD Advanced Notification: Manuscript: Washington et al., Nontargeted mas-spectral discovery of novel PFAS & their use to fingerprint legacy PFAS in New Jersey

Sharing comments on the Washington et al. PFAS manuscript from OCSPP-OPPT.

Note: Region 2 asked for a one-week extension on providing comments.

Jeff

Jeffrey B. Frithsen, Ph.D.

National Program Director

Chemical Safety for Sustainability Research Program

Office of Research and Development (8101R)

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From: Stedeford, Todd <Stedeford.Todd@epa.gov>

Sent: Monday, December 9, 2019 3:01 PM

To: Frithsen, Jeff <Frithsen.Jeff@epa.gov>

Cc: Henry, Tala <Henry.Tala@epa.gov>; Morris, Jeff <Morris.Jeff@epa.gov>

Subject: RE: ORD Advanced Notification: Manuscript: Washington et al., Nontargeted mas-spectral discovery of novel PFAS & their use to fingerprint legacy PFAS in New Jersey

Hi Jeff,

Ex. 5 Deliberative Process (DP)

Todd

From: Frithsen, Jeff <Frithsen.Jeff@epa.gov>
Sent: Sunday, November 24, 2019 10:49 AM
To: Morris, Jeff <Morris.Jeff@epa.gov>; Henry, Tala <Henry.Tala@epa.gov>; Stedeford, Todd <Stedeford.Todd@epa.gov>; Pensak, Mindy <Pensak.Mindy@epa.gov>
Cc: Tietge, Joe <Tietge.Joe@epa.gov>; Fleming, Megan <Fleming.Megan@epa.gov>; Gillespie, Andrew <Gillespie.Andrew@epa.gov>; LaVay, Maggie <LaVay.Maggie@epa.gov>
Subject: ORD Advanced Notification: Manuscript: Washington et al., Nontargeted mas-spectral discovery of novel PFAS & their use to fingerprint legacy PFAS in New Jersey

ORD is providing for advanced notification a recently developed manuscript. The manuscript is Washington et al., *Nontargeted mas-spectral discovery of novel PFAS & their use to fingerprint legacy PFAS in New Jersey*.

This advanced notification is being provided to OCSPP-OPPT and Region 2.

The goal of this advanced notification is to ensure there are no policy statements contained within the product or factual errors regarding programs and to avoid surprises of published data relevant to the activities of our program and regional partners.

We ask for your comments by COB Monday, December 9.

Please provide any comments you might have and let me know should you have any questions. Thanks in advance!

Jeff

Jeffrey B. Frithsen, Ph.D.
National Program Director
Chemical Safety for Sustainability Research Program
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From: "Gillespie, Andrew" <Gillespie.Andrew@epa.gov>
Date: November 15, 2019 at 9:02:39 AM EST
To: "Rodan, Bruce" <rodan.bruce@epa.gov>
Cc: "Fleming, Megan" <Fleming.Megan@epa.gov>
Subject: **ADVANCED NOTIFICATION - novel PFAS, fingerprinting, transport, New Jersey**

(resending revised manuscript following comments from Bruce)...

Hello Bruce – here is another PFAS manuscript from CEMM for advanced notification, using some of our recently generated data from New Jersey to identify some new PFAS congeners in soil samples as well as using those data for fingerprinting likely sources. Given the novel nature of the PFAS and their presence in soil, I suggest sharing with OCSPP and OLEM for advanced notification. We made OCSPP aware of the novel PFAS findings last year, when we first generated the data, so this should not be a surprise.

Text of fact sheet is below.

Ex. 5 Deliberative Process (DP)

Ex. 5 Deliberative Process (DP)

Please let me know if there are any questions, and thank you for your assistance.

Best regards, Andy

Transmittal Summary Document
ORD Manuscript Review

1. Manuscript Title:

Use of Nontargeted PFAS to Develop a Legacy PFAS Fingerprint in New Jersey

Authors: John W. Washington^{1*}, Charlita G. Rosal¹, James P. McCord², Mark J. Strynar², Andrew B. Lindstrom², Erica L. Bergman³, Sandra M. Goodrow³, Haile K. Tadesse², Andrew N. Pilant², Benjamin J. Washington⁴, Mary J. Davis¹, Brittany G. Stuart⁵, Thomas M. Jenkins⁶

Affiliations: ¹USEPA, Office Research and Development, Athens, GA.

²USEPA, Office Research and Development, Research Triangle Park, NC.

³NJDEP, Division of Science and Research, Trenton, NJ.

⁴USEPA, Office Research and Development, Washington, DC.

⁵USEPA, Office of Research and Development, Cincinnati, OH.

⁶Senior Environmental Employment Program (USEPA/ORD), Athens, GA.

1. Background/Overview:

New Jersey Department of Environmental Protection (NJDEP) requested ORD's assistance to investigate legacy PFAS distribution in NJ, including two potential PFAS sources. NJDEP collected soil, vegetation and water samples from transects and from across much of the state, delivering soil/veg samples to Athens and water to RTP.

In this manuscript, we report on soil PFAS in New Jersey, not US water. In soil, we identified ten new PFAS compounds, chlor-perfluoro-polyether-carboxylates (CIPFPECAs), using nontargeted analyses and semiquantitated the concentrations of these compounds. We contoured these CIPFPECA values on a map, forming a pattern focusing on one of the potential sources identified by NJDEP.

We used the CIPFPECA data, and PFAS reaction stoichiometry, to develop a fingerprint of legacy PFAS. When this legacy fingerprint was contoured on a map, it formed a pattern focusing on both potential sources identified by NJDEP.

1. Relevancy to program office/regional research needs/priorities:

The data and information reported here suggest that fingerprinting of PFAS may be possible in certain situations to support risk managers in identifying sources of specific PFAS.

1. Name(s) of program/regional office coauthors or reviewer(s) of earlier drafts, if any

No program or regional coauthors or reviewers. Staff from NJ DEP are included as coauthors. Draft manuscript has been shared for awareness with R2 POC for the NJ collaboration.

1. Major observations and results:

Collectively, our results: (i) identify ten novel PFAS, CIPFPECAs, not previously detected in the environment, including congeners with no previous reports, so far as we know; (ii) suggest many CIPFPECA congeners have bioconcentration potential on the order of or greater than PFOA and PFOS; (iii) document the widespread distribution of CIPFPECAs over much of densely populated New Jersey; (iv) indicate the source of these CIPFPECAs in New Jersey dominantly are from Solvay; (v) were used to fingerprint historical sources of legacy long-chain PFCAs C11 and C13 being from Solvay, and C10 and C12 from the Chemours facility; and (vi) document discernable signals of these legacy PFCAs across an expansive breadth of south Jersey persisting today.

1. Potential implications of the findings:

These data and information: (i) are of interest to NJDEP staff; (ii) suggest a potential exposure of a large population to PFAS; and (iii) also suggest a potential for bioaccumulation.

1. Findings advancing existing scientific knowledge:

Advances in scientific knowledge include: (i) identification/elucidation of ten new PFAS congeners, potentially with isomers, in the environment; (ii) development of methods to detect these compounds on conventional LC/MS/MS; (iii) document sorting of PFAS in atmospheric plumes by molecular mass, perhaps for the first time; (iv) document considerable atmospheric transport distances of PFAS having very low vapor pressures (i.e., chemically non-gaseous PFAS), contrary to expectations of many chemists (e.g., me); (v) reporting of semiquantitative concentrations of nontargeted analytes for the first time in the peer-reviewed literature so far as I know (I had reported semi-quantitated values for targeted compounds in the past but not nontargeted); (vi) perhaps reports one of the first fingerprints of legacy compounds in a complex contaminant setting – there's lots of literature noise about fingerprinting, but I have seen no real-world examples that aren't isolated sites in generally pristine surroundings or unique compounds.

1. Publication information (journal, book) and estimated timelines:

Optimistically, I hope to have this thru clearance by the end of November. When clearance is complete, I plan to submit to the journal Science. Realistically, I understand the strong chance of rejection by Science at which time I would rewrite for format and submit to ES&T.

Andrew J. R. Gillespie, Ph. D.
Associate Director, US EPA/ORD/CEMM
ORD Executive Lead for PFAS R&D

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